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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/528,262	03/17/2000	Steven P. Den Baars	585-27-009	4221

7590 07/11/2003

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EXAMINER

BAUMEISTER, BRADLEY W

ART UNIT	PAPER NUMBER
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2815

DATE MAILED: 07/11/2003

25

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/528,262

Applicant(s)

Denbaars et al.

Examiner

B. William Baumeister

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Apr 21, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-7, 9, 14-16, 24-31, 33-44, and 46-55 is/are pending in the application.
- 4a) Of the above, claim(s) 48-51 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claims 4-7, 9, 14-16, 24-31, 33-44, 46, 47, and 52-55 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other: _____

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DETAILED ACTION¹

Election/Restriction

1. Applicant's amendments have resulted in the claims now being directed towards such a wide array of embodiments and/or features that a thorough examination of all of the claims and consideration of all of the associated issues would constitute an undue burden. Accordingly, the amendments have necessitated the issuance of the following restriction.

2. This application contains claims directed to the following patentably distinct species of the claimed invention:

Species I: Claims 4-7, 14, 15, 24, 41 and 42, directed towards a light emitter having a substrate that is doped throughout with impurities.

Species II: Claims 16, 25-29, 43 44, 52 and 53, directed towards a light emitter having a substrate that contains impurities in separate color centers.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 9, 30, 31, 33-40, 46, 47, 54 and 55 appear to be generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon,

¹Please note the **Request for Correction/Clarification** section that follows the restriction requirement.

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including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

3. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

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Request for Correction/Clarification

5. For the sake of compact prosecution, the Examiner now notes the following issues that may raise questions, objections and/or 112-2nd paragraph rejections upon further prosecution on the merits. Applicant is invited to take this opportunity to correct or address these issues.

a. Claim 14, line 14 now states that said impurities simultaneously absorb light and “*each re-emits more than one color of light.*” (Italics added.) While one skilled in the art would understand that the impurities recited in the specification would each emit primarily one particular light wavelength band or color (e.g., Cr emits red), and that plural, different impurities would result in the re-emission of more than one color of light, the italicized portion of claim 14 appears to set forth that a single, given impurity will re-emit more than one color of light.

b. Claim 37 recites “said means for causing each of said plurality of active layers to emit *omnidirectional* light...” Insufficient antecedent basis exists for the term omnidirectional, as this term does not appear in parent claim 30. Rather, claim 30 sets forth “means for selectively causing each of said plurality of active layers to emit light...” It is unclear whether claim 37 is intended to further limit claim 30 by this additional term, or whether “omnidirectional” was inadvertently omitted from claim 30.

c. Claim 42 recites that said doped substrate absorb[s] said UV light and emit[s] red, green and blue light. There is insufficient antecedent basis for “said UV light.”

d. Claim 39 (and the portion of the specification associated with the embodiment of FIG 2) sets forth that when a UV-blue-green, multicolor LED is formed on a substrate that is

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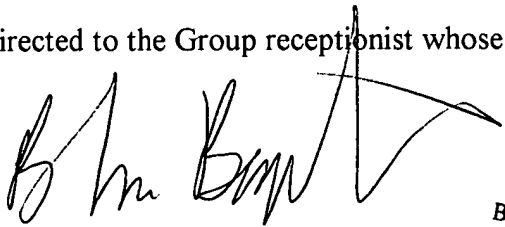
doped to emit red light (e.g., ruby), the device may be biased to effectively emit only one of red, green or blue. Restated, the ruby substrate will re-emit red light upon the absorption of UV light, but will not re-emit red light upon the absorption of blue or green light. Alternatively, claim 40 (and the portion of the specification associated with the embodiment of FIG 4) sets forth that when a blue- yellow multicolor LED is formed on a substrate that is doped to emit red light (e.g., ruby), the substrate will re-emit red light upon the absorption of yellow light.

i. While the absorption wavelength peaks and absorption cross-sections at other given wavelengths of conventional dopant impurities--such as those cited in the specification--are either known or at least readily ascertainable through routine experimentation, the Examiner does not have this data memorized for every such impurity. As such, it is unclear to the Examiner whether Applicant's position is that (1) ruby has a broad absorption peak that extends from UV to yellow (in which case the ruby substrate should also re-emit red upon the absorption of blue or green light, raising enablement issues for claim 39, as it would be unclear how to emit only blue or green light alone without causing a simultaneous re-emission of red light); or alternatively (2) that ruby has two discrete absorption peaks for UV and yellow wavelengths, but not for the intermediate-wavelengths of blue and green. Appropriate clarification is requested, and any available data for ruby's absorption cross section would be material to the present examination within the meaning of Rule 1.56.

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INFORMATION ON HOW TO CONTACT THE USPTO

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to the examiner, **B. William Baumeister**, at (703) 306-9165. The examiner can normally be reached Monday through Friday, 8:30 a.m. to 5:00 p.m. If the Examiner is not available, the Examiner's supervisor, Mr. Eddie Lee, can be reached at (703) 308-1690. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



B. William Baumeister

**B. WILLIAM BAUMEISTER
PRIMARY EXAMINER**

Primary Examiner, Art Unit 2815

July 9, 2003